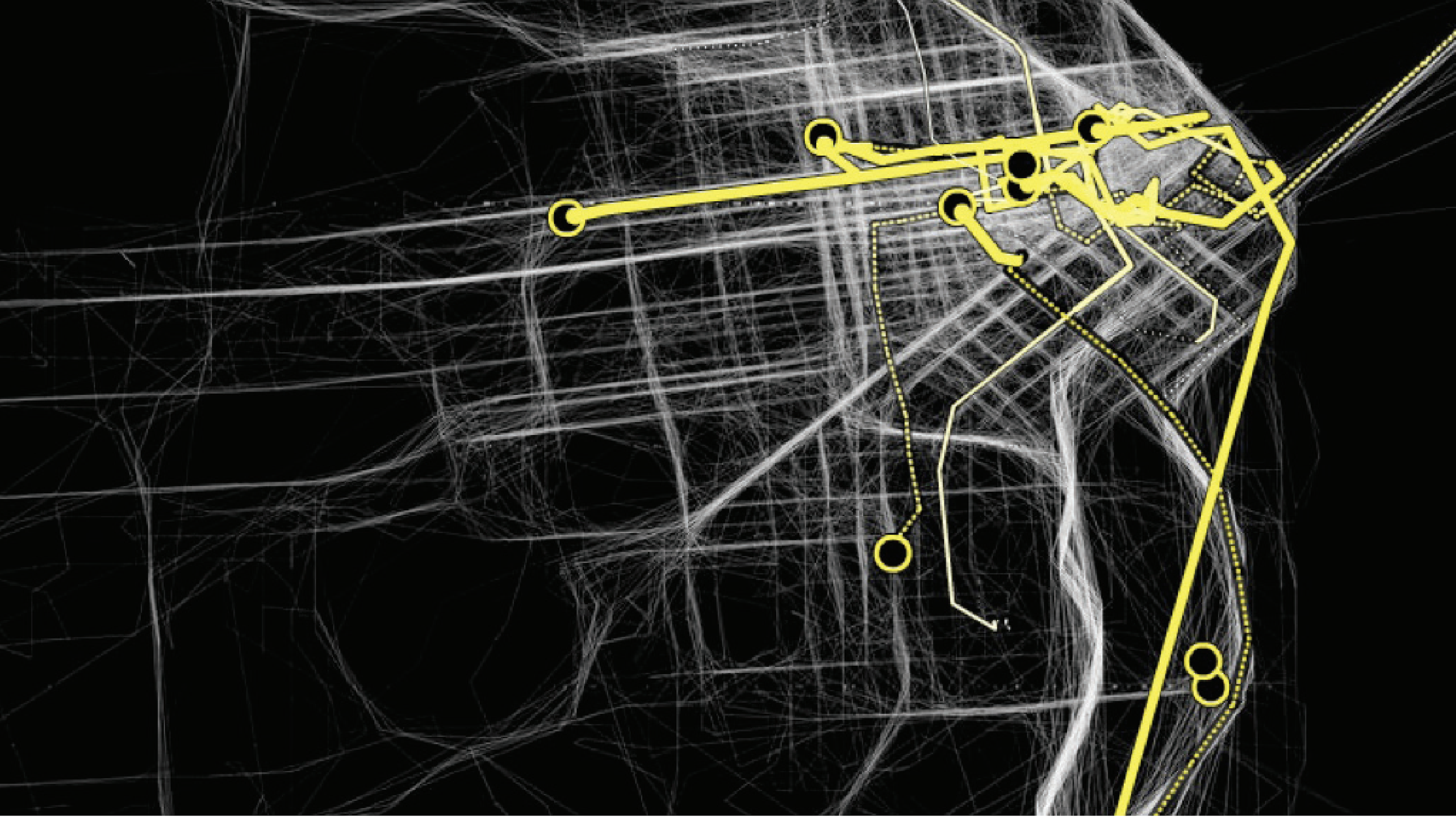
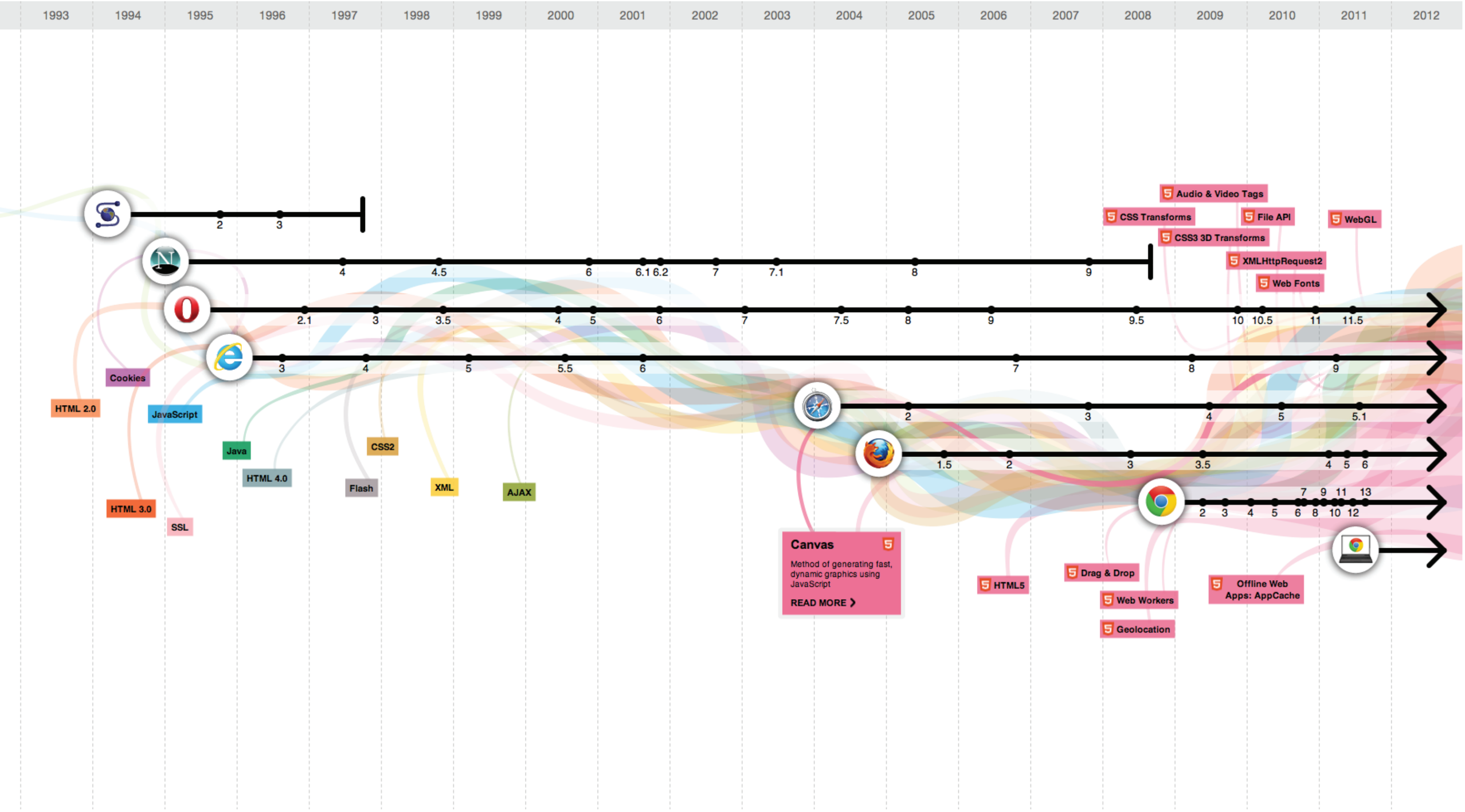


CCT470 Information Visualization

Greg J. Smith

Let’s look at some projects and chat – conversation is always a good starting point.

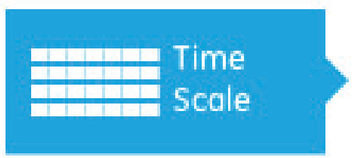


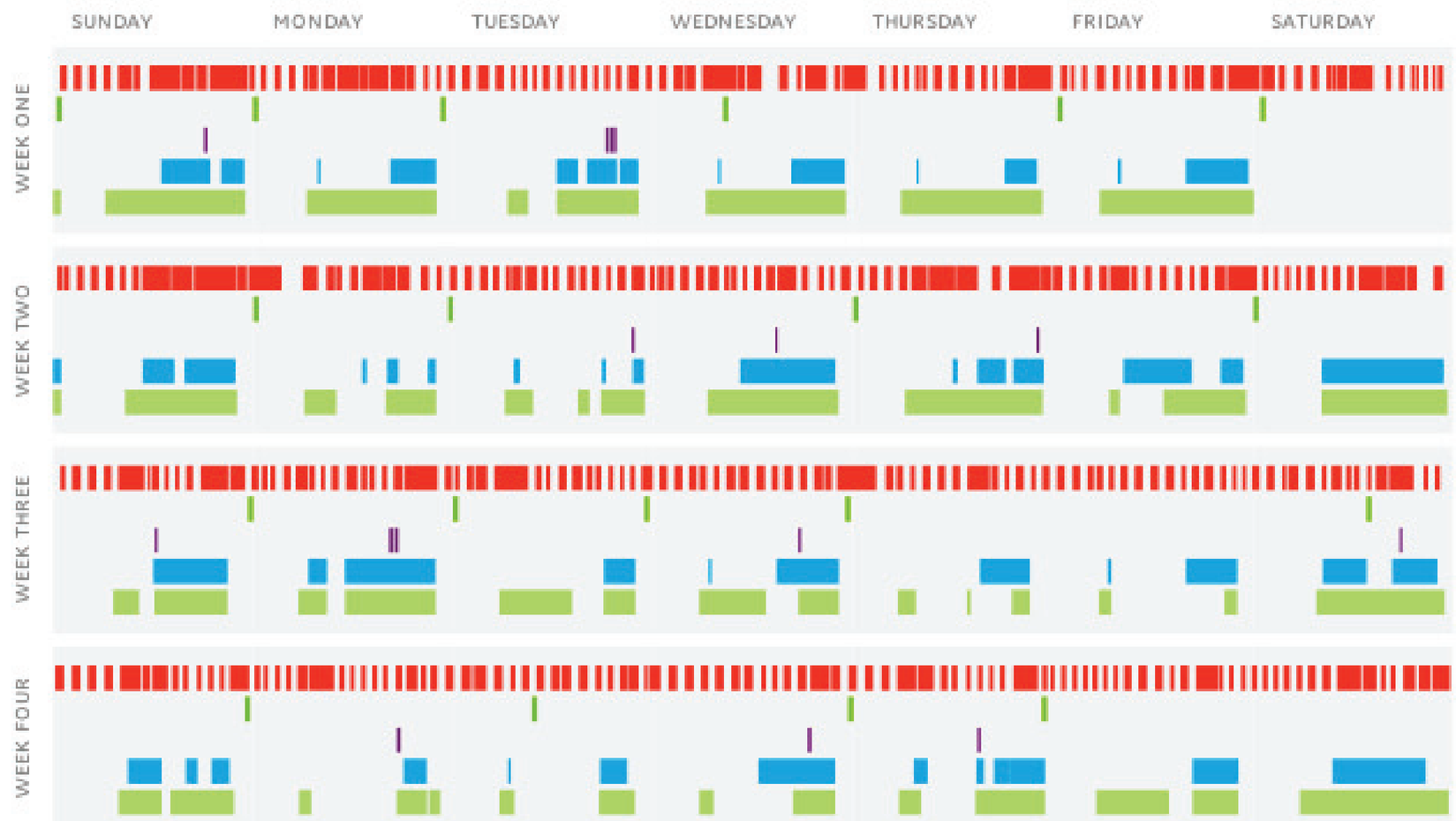
Evolution of the Web – http://evolutionofweb.appspot.com
Google, Hyperakt & Vizzuality (2011)

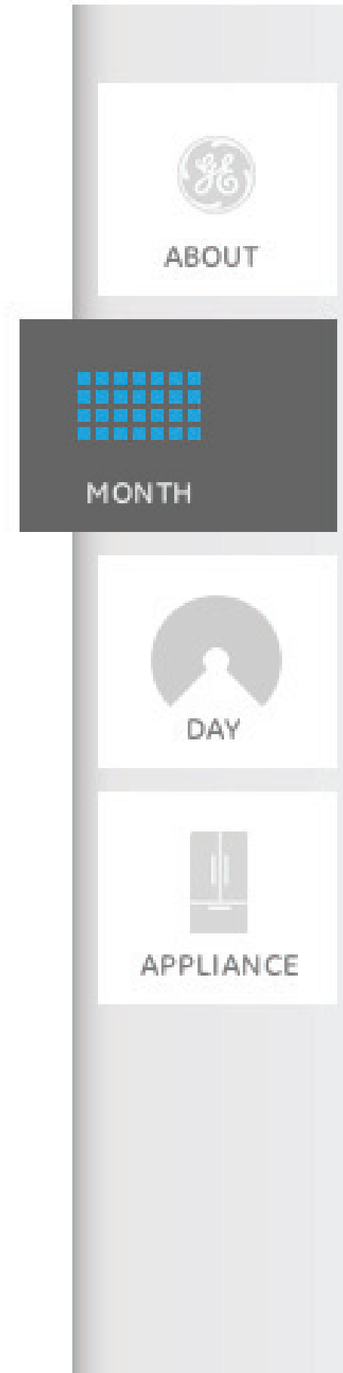
notes:

- Built in HTML5
- Leverages SVG support / for rendering images on Canvas
- Employs Raphaël javascript library
- jQuery for interaction

There are lots of ways to look at energy use! Tap below to see this information sorted by:







Powering the Kitchen – http://visualization.geblogs.com/visualization/kitchen/
Ben Fry/Fathom (2011)

notes:

- Built in Processing –> processing.js for web browsing
- Originally developed for trade show, rejigged for the web
- Employing data from major domestic appliances, measured over time.

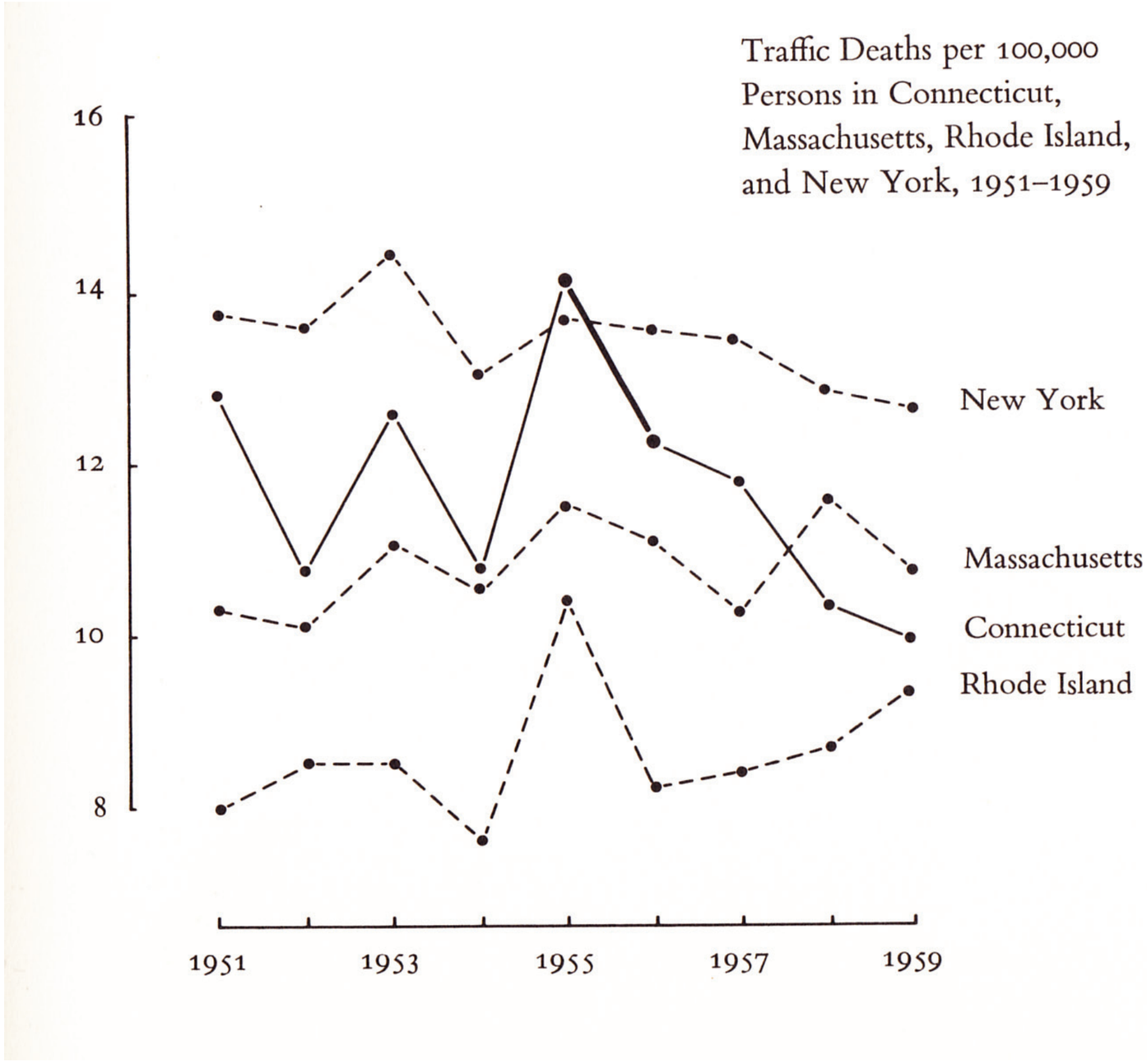
MTV Live Twitter Visualizations – http://vimeo.com/11302556 (2010-)
Stamen Design

notes:

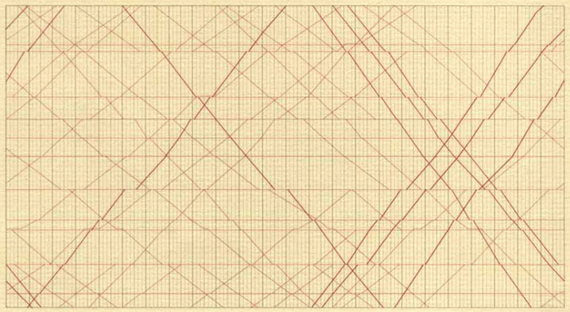
- Employs Stamen's Eddy platform for tweet aggregation
- based off 580,000 tweets
- crunched 23,000 tweets on Sandra Bullock (one 'asset' within the visualization)

See http://media.twitter.com/623/mtv-stamen for some more notes courtesy of Robin Sloan.

What general observations can we make about this body of work?



source: The Visual Display of Quantiative Information pg. 74



The Visual Display of Quantitative Information

EDWARD R. TUFTE

Rather than dwell on data visu-
alization as a field or medium,
it might make sense to think
about the broader field of infor-
mation design.

“Information design is the transfer of complex data to, for the most part, two-dimensional visual representations that aim at communicating, documenting and presevrving knowledge. It deals with making entire sets of facts and their interrelations comprehensible, with the objective of creating transparency and eliminating uncertainty.”

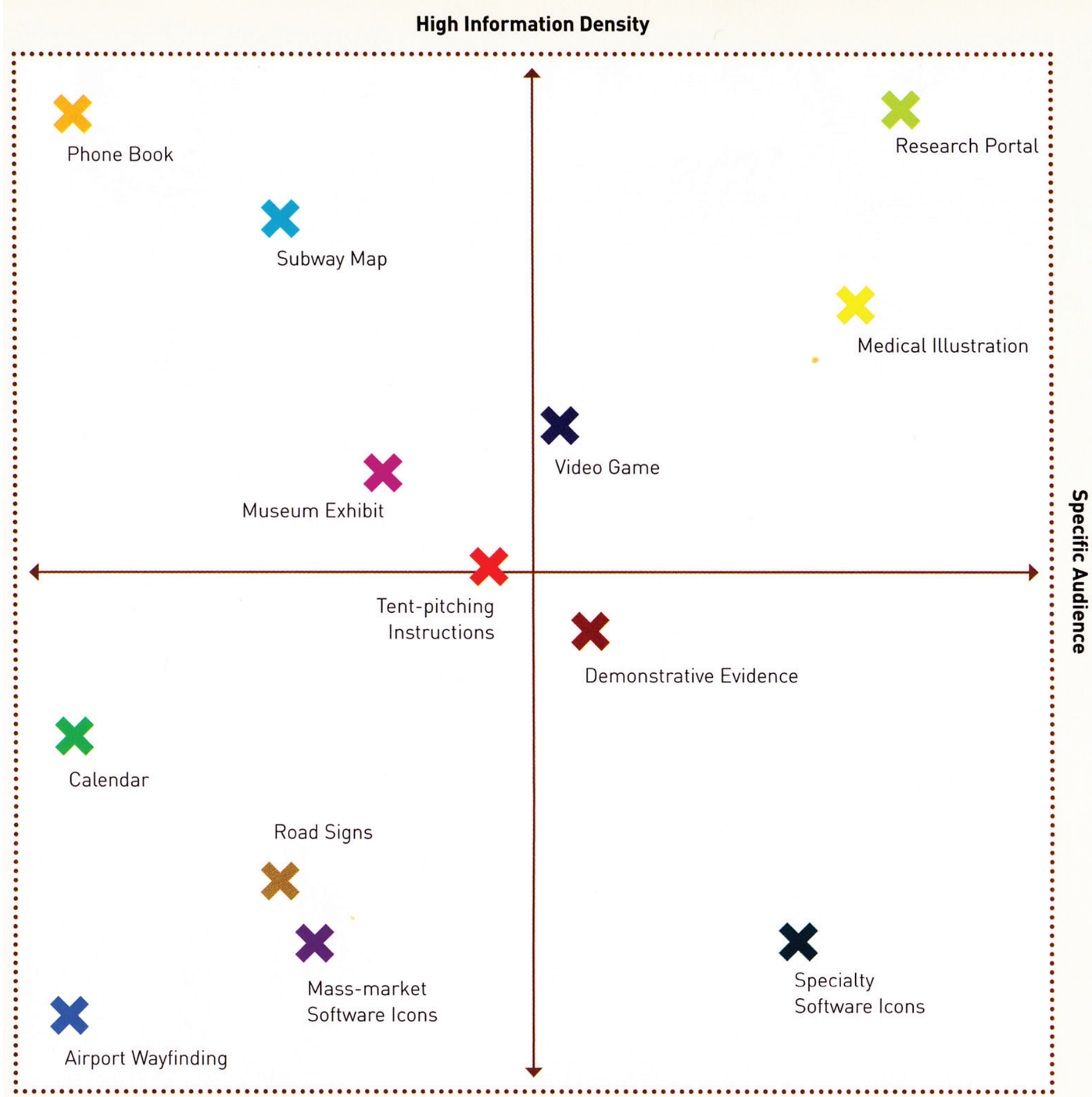
– Gerlinde Schuller

“My quote is: ‘The only way to communicate is to understand what it is like not to understand.’ It is at that moment that you can make something understandable.”

– Richard Saul Wurman

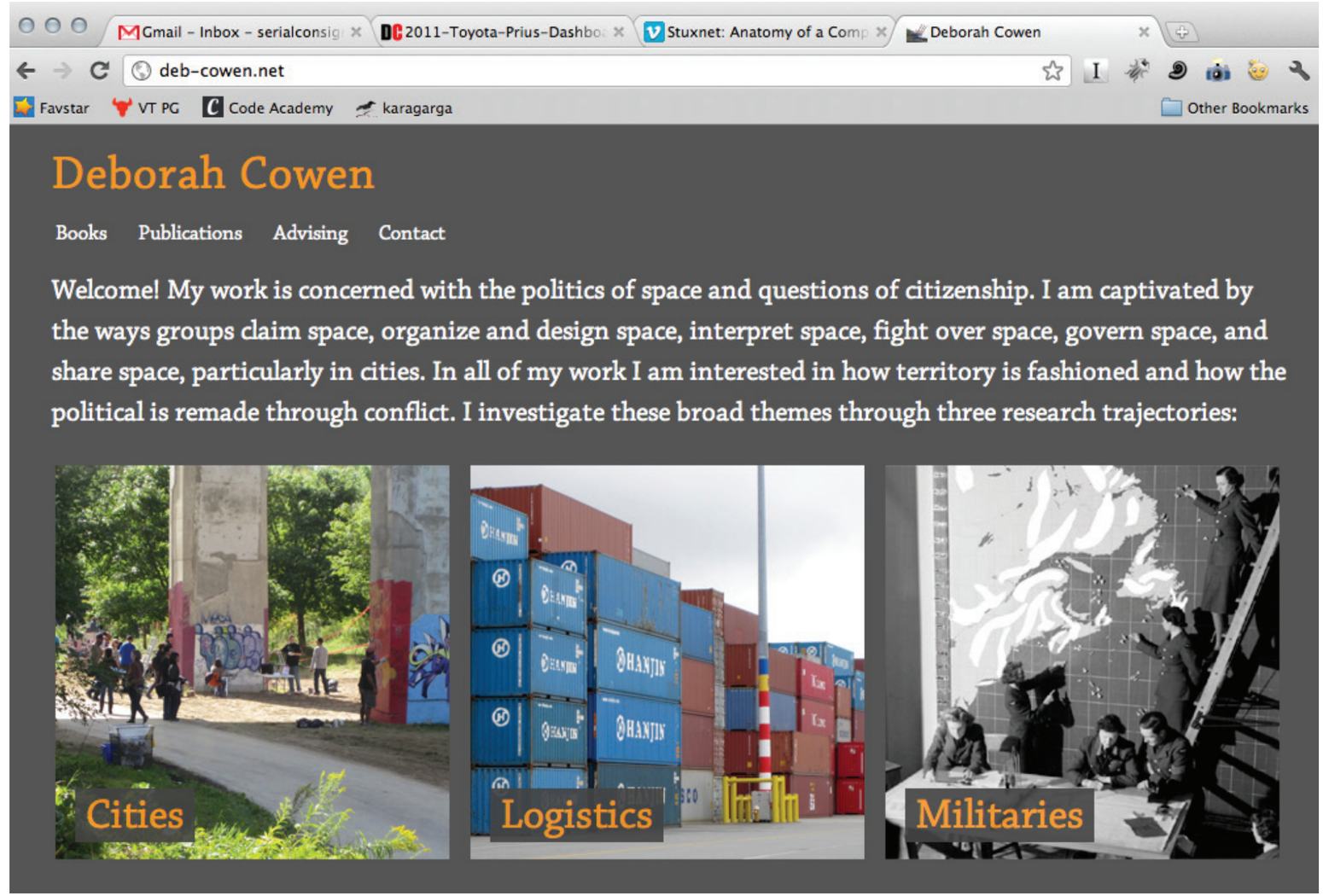
“Information design makes complex information easier to understand and use.”

– AIGA



Information design survey
source: The Information Design Handbook, pg. 24.

```
/* */

body , h1 {
font-family: chaparral-pro, serif;
}

body {
background: #555555;
font-size: 16px;
}

.site-name {
font-family: chaparral-pro, sans-serif;
font-style: normal;
font-weight: 400;
letter-spacing: 0.035em;
display: block;
padding-left: 5px;
}

.page-node-10 .site-name a {
color: #ff9933;
}

.site-name a {
color: #ffffff;
}
```



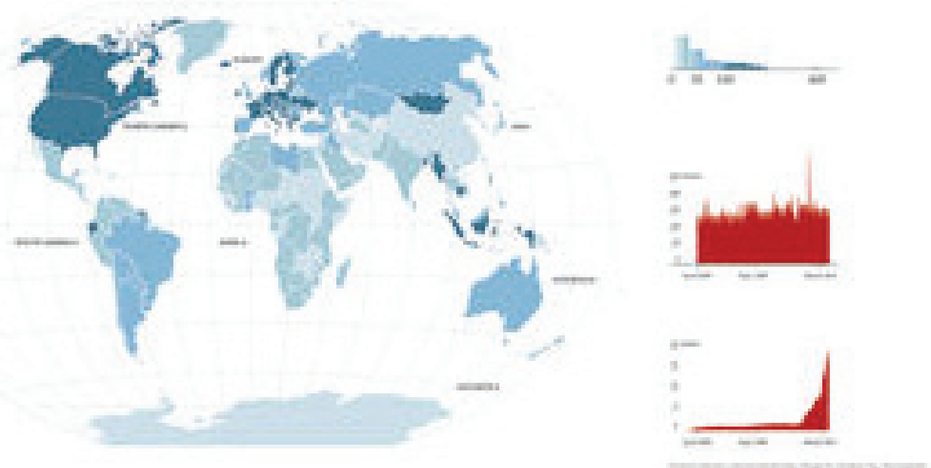
Web is good frame of reference – epitomizes separation of style & content.
CSS provides 'rules' that tell the content how to behave.
Content and style can be edited independently of one another.

Required Materials

NATHAN YAU

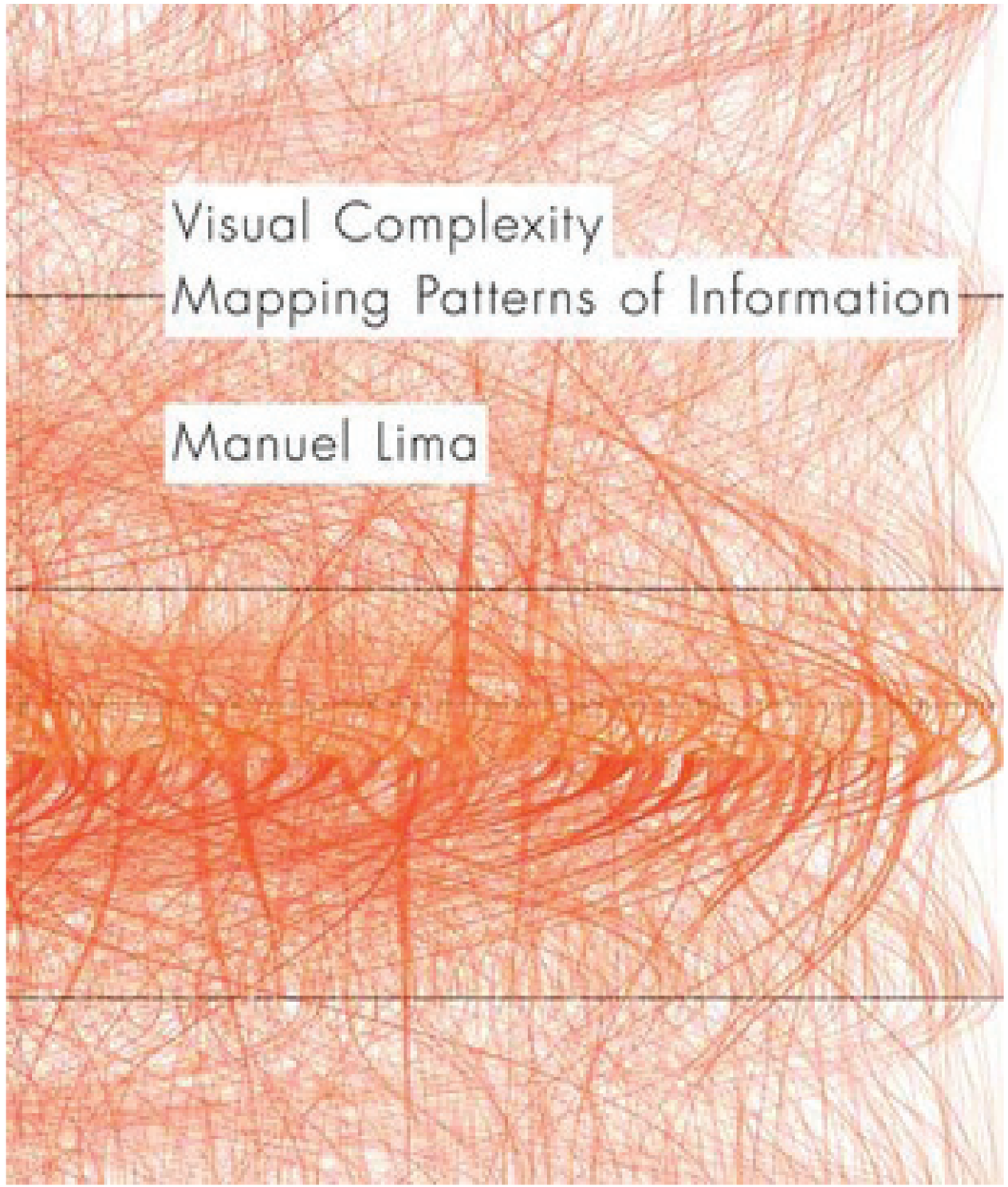
VISUALIZE THIS

The Flowing Data Guide to Design, Visualization, and Statistics



The Information Design Handbook

Jenn + Ken Visocky O'Grady



Visual Complexity
Mapping Patterns of Information

Manuel Lima

R Console

```
R version 2.13.1 Patched (2011-08-19 r56771)
Copyright (C) 2011 The R Foundation for Statistical Computing
ISBN 3-900051-07-0
Platform: x86_64-apple-darwin9.8.0/x86_64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

  Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

[R.app GUI 1.42 (5895) x86_64-apple-darwin9.8.0]

[History restored from /Users/MissionSpecialist/.Rapp.history]

> # Load data
unemployment <- read.csv("http://datasets.flowingdata.com/unemployment-rate-1948-2010.csv", sep=",")
unemployment[1:10,]

# Plain scatter plot
plot(1:length(unemployment$Value), unemployment$Value)

# Fitted linear line
lines(c(1,746), c(4.889523,6.42593))

# Scatter plot with loess
scatter.smooth(x=1:length(unemployment$Value), y=unemployment$Value)

# Fix y-axis to start at zero
scatter.smooth(x=1:length(unemployment$Value), y=unemployment$Value, ylim=c(0,11), degree=2)

# Change color
scatter.smooth(x=1:length(unemployment$Value), y=unemployment$Value, ylim=c(0,11), degree=2,
col="#CCCCCC", span=0.5)
```

Housecleaning

Three Provocations

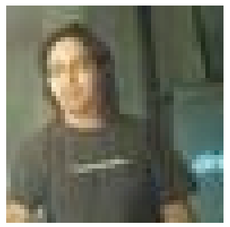
Is data singular or plural?

Data is both a count noun and a mass noun.

Count nouns are used for objects that can be counted – distinct objects that can be numbered (e.g. eggs). Can be singular or plural. Mass nouns are for objects that don't have a natural boundary and can't be counted. (e.g. butter).

"So if data is correct as both a count noun and as a mass noun, which should you use? It comes down to style and personal preference. Many academic and scientific fields, as well as many publishers and newspapers, still insist on the plural count noun use of data, as in The data are compelling, but it is more commonly used as a singular mass noun, as in The data is compelling."

http://grammar.quickanddirtytips.com/is-data-singular-or-plural.aspx

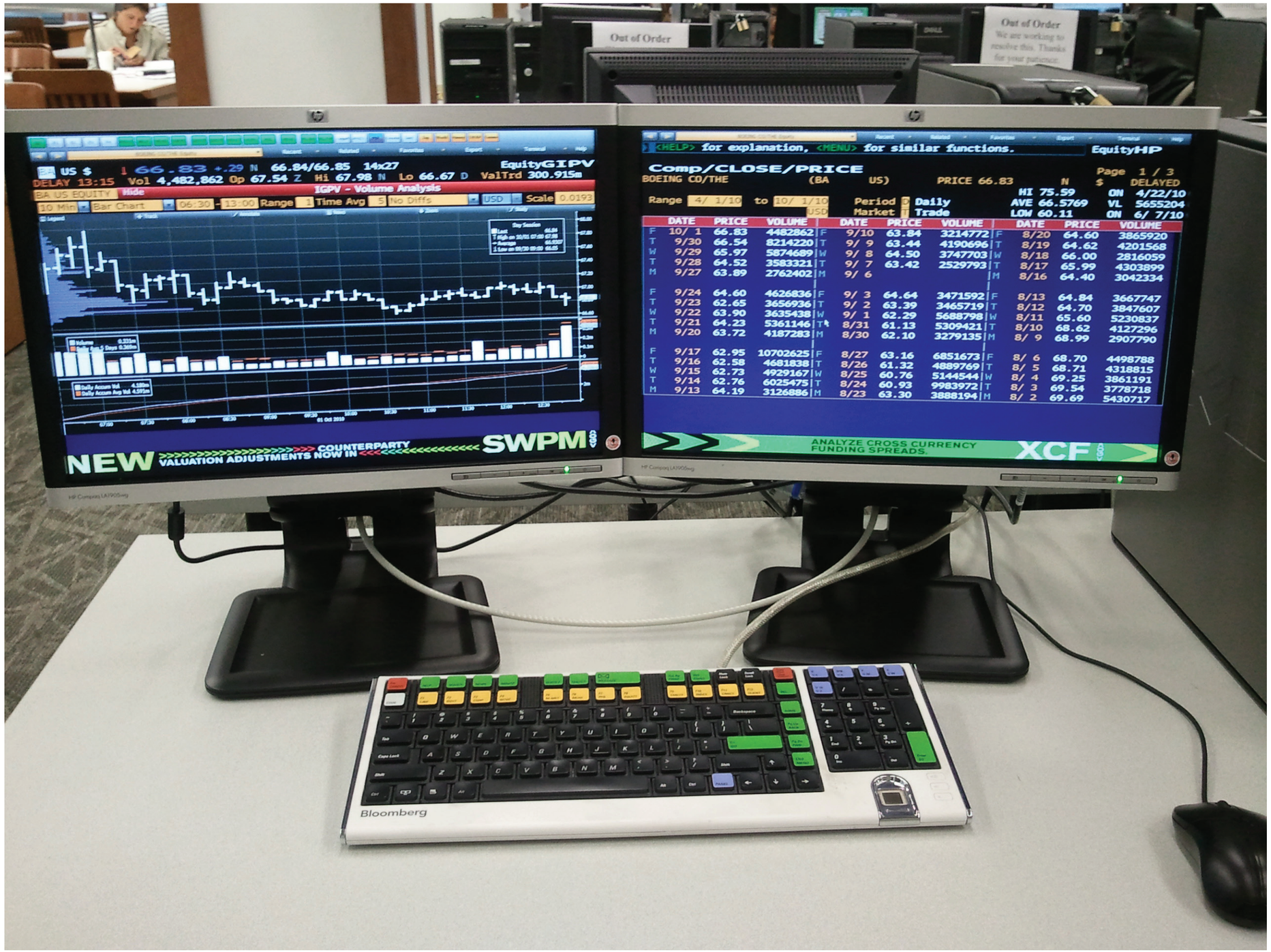


@robmyers
Rob Myers

Data Visualization is the Socialist Realism of Neoliberalism.

10 Apr 08 via web ⭐ Unfavorite Retweet Reply

Gemeinschaftsarbeit der sozialistischen Länder
Walter Womacka



Bloomberg Terminal

Where does information visualization stop, and interaction design begin?

Let's get our feet wet and start to develop our critical faculties.

Stuxnet: Anatomy of a Computer Virus – http://vimeo.com/25118844 (2011)
Patrick Clair (2011)